

**REMARKS**

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 27-54 are pending in the application. New claim 54 has been added to provide Applicants with the scope of protection to which they are believed entitled. The amended/new claims find solid support in the original specification, e.g., page 9, lines 6-19. No new matter has been introduced through the foregoing amendments.

The art rejections relying primarily on *Moriyasu* (U.S. Patent No. 5,857,986) are traversed, because the reference does not fairly teach or disclose each and every element of the rejected claim, e.g., the limitation of independent claim 27 that "the vibrational stimulator can apply vibrational stimulation to a user via a unit which can reciprocally move relative to a user in response to the pressure sensor sensing an applied pressure which exceeds the threshold pressure."

The Examiner's allegation<sup>1</sup> that *Moriyasu* teaches a joystick which can reciprocally move relative to a user in response to the "pressure sensor" sensing an applied pressure which exceeds the "threshold pressure" is noted. Applicants respectfully disagree with the Examiner, because the *Moriyasu* joystick does not move in response to the pressure sensor's detection of an applied pressure exceeding the threshold pressure. The *Moriyasu* joystick is moved by the player, i.e., in response to the applied pressure, rather than to the pressure sensor's detection of such applied pressure. Thus, independent claim 27 is not anticipated by *Moriyasu*.

It should be further noted that the purpose and characteristics of *Moriyasu* are entirely different from the claimed invention. The claimed invention relates to an apparatus and method for muscular stimulation. *Moriyasu* conversely relates to an interactive vibrator system for use

with video game entertainment. Moriyasu does not provide a beneficial exercise effect to a user's muscles.

The main characteristics of Moriyasu refer to a combination of audio/video and physical signals. The embodiments of the claimed invention do not depend on audio/visual feedback, but are instead driven by the amount of force applied actively by the user in a specific or in different directions. Vibration activity can be started and/or stopped when specific levels (pre-set by the user and/or part of a programme) of force for a specific length of time are applied to the vibration source or through the vibration source.

The Examiner alleges that the vibrational simulator of Moriyasu is deactivated when the pressure sensor ceases to sense an applied pressure which exceeds the threshold pressure value. Applicants respectfully submit that this is not strictly true however, because, as can be seen in column 3 lines 51-53 of Moriyasu, "The computer's interaction with the user is defined by the particular program". Thus the vibrational output, while related to the user's input, is not directly dependant upon it. The video game program will choose when vibration occurs, whether that be in the presence or absence of a user's input. On the other hand the claimed invention has a direct link between a user's force exceeding a certain value upon the pressure sensor and the resultant vibration.

Moriyasu teaches that the control unit sets only the amplitude of the vibration and not the amplitude and frequency as in embodiments of the claimed invention. The embodiments of the claimed invention provide the opportunity for the user to decide when a vibrational stimulation is activated and what type of vibrational stimulation will be delivered based upon different parameters.

For the reasons presented above Applicants respectfully submit that independent claim 27

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<sup>1</sup> See, for example, Office Action at page 3, lines 1-2.

and all claims depending therefrom are neither anticipated by nor obvious over the *Moriyasu* reference.

The art rejections relying primarily on *Leivseth* (WO 02/053084) are traversed, because the reference does not fairly teach or disclose each and every element of the rejected claim, e.g., the limitation of independent claim 27 that “the vibrational stimulator can apply vibrational stimulation to a user via a unit which can reciprocally move relative to a user in response to the pressure sensor sensing an applied pressure which exceeds the threshold pressure.” The shaft on which the vibrator of *Leivseth* is mounted<sup>2</sup> is not disclosed or suggested by *Leivseth* to be moveable in response to the pressure sensor’s detection of sufficient applied pressure/weight in the presently claimed manner.

The Examiner alleges that *Leivseth* discloses a vibrational stimulator which can move “reciprocally” relative to the user. Applicants respectfully submit that this is, however, not true because *Leivseth*’s device operates statically. It does not allow the user to apply force and receive vibration while the vibrating source moves away and/or towards the user. Furthermore, the initial pressure controlling vibrational stimulation in *Leivseth* is only measured in a static condition. In contrast, embodiments of the claimed invention allow the continuous monitoring of tension and vibration feedback in both static and dynamic positions caused either by the user’s movements or the vibration sources’ movements.

*Leivseth* is limited by the fact that the user needs to be standing on the device to use it and cannot exercise when the weight or pressure is lower than the user’s body weight. The embodiments of the claimed invention allow the user to exercise when levels of applied force are very low and/or proximal to zero.

*Leivseth* is also limited by the direction of application of vibration to the body. The user needs to be standing on the device, while in contrast embodiments of the claimed invention allow

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<sup>2</sup> See, for example, Office Action at page 4, lines 4-7 from bottom.

the user to be in various different positions and exercise both the lower and upper body by directing the vibration directly to the exercising muscles. Furthermore, the configuration and use of sensors in embodiments of the claimed invention allow the user to exercise lower and upper body muscles and trunk muscles.

For the reasons presented above Applicants respectfully submit that independent claim 27 and all claims depending therefrom are neither anticipated by nor obvious over the *Leivseth* reference.

The rejections of the dependent claims are inappropriate for at least the reasons presented above with respect to independent claim 27. Applicants will nevertheless proceed with their remarks regarding *Bosco* (U.S. Patent Application Publication No. 2003/0135140) and *Mondlock* (U.S. Patent No. 4,705,271).

*Bosco* relates to a method for optimally mechanically stimulating one or more muscles through mechanical means, through the use of muscular electrical activity detectors being applied on a corresponding muscle to be subjected to stimulation, *Bosco* merely discloses that the mechanical means may be a mechanically vibrating plate upon which a user can stand. Applicants respectfully submit that *Bosco* thus adds nothing of relevance to the patentability of the claimed invention over the disclosure of *Leivseth*.

Further, the Examiner's combination of *Mondlock* and *Leivseth* if proper would result in an exercise apparatus similar to *Mondlock* which also provided vibration to a user. This is however not the same as the claimed invention. The apparatus in accordance with embodiments of the claimed invention only vibrates when a certain force in excess of a defined threshold pressure is reached. This threshold pressure can be set by the user, e.g. according to a percentage of his/her maximum force. Thus, the benefit of the vibration to the muscles is specific to working muscles and not resting muscles.

Leivseth provides vibration predominantly to the legs. Having no moving parts, no exertion is required in use of Leivseth. A person skilled in the art would understand Leivseth to not concern itself with working muscles. Neither Leivseth nor Mondlock teach to provide vibration to working muscles specifically.

Accordingly, Applicants respectfully submit that claims 27-53 are patentable over that applied art of record.

New independent claim 54 recites an exercise apparatus for muscular stimulation of a user, which apparatus comprises, among other things, a unit which is adapted to both (i) apply vibrational stimulation to the user when the vibrational stimulator is activated by the control unit, and (ii) in addition to said vibrational stimulation, reciprocally move, in a predetermined manner, relative to the user in response to the pressure sensor sensing an applied pressure exceeding the threshold pressure. The applied references, especially *Moriyasu* and *Leivseth*, singly or in combination fail to disclose, teach or suggest all limitations of the new claim.

For example, *Moriyasu* discloses no exercise apparatus. Further, the joystick of *Moriyasu* is not moveable in response to the pressure sensor sensing a sufficient applied pressure, as discussed *supra* with respect to claim 27. *Leivseth*, as also argued with respect to claim 27, fails to teach or suggest that the shaft on which the vibrator is mounted is at all moveable in response to the pressure sensor sensing a sufficient applied pressure.

In conclusion, none of the applied references teach or suggest a unit that can both apply vibrational stimulation and perform reciprocal movement in response to the pressure sensor's detection. New claim 54 is thus patentable over the applied art of record.

Each of the Examiner's rejections has been traversed. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,  
LOWE HAUPTMAN & BERNER, LLP



Kenneth M. Berner  
Registration No. 37,093

USPTO Customer No. 22429  
1700 Diagonal Road, Suite 310  
Alexandria, VA 22314  
(703) 684-1111  
(703) 518-5499 Facsimile  
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KMB/KL/mkl